

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for assessing irradiation intensity of a laser beam including steps of:

forming an irradiation region on a reference object on which photo-ablation is caused by irradiating a laser beam for ablation, the reference object having a layer in which a transmitting quantity of illumination light changes in accordance with a thickness, by processing the reference object in a condition of ablating a predetermined irradiation region to a uniform depth with an ultraviolet laser processing device;

obtaining an image having information on a gradation contrast change based on the transmitting quantity of the illumination light transmitted through respective positions in the irradiation region of the reference object by projecting the illumination light onto the reference object on which the irradiation region has been formed; and

assessing appropriateness of irradiation intensity distribution of the ultraviolet laser processing device based on whether the gradation contrast change is in a permissible range by analyzing information on a luminance change in the irradiation region of the image

~~irradiating the laser beam onto a reference object on which a change in its state is caused by irradiating the laser beam, and a light quantity of transmitted light of specified illumination light changes in accordance with an irradiation energy density of the laser beam when the illumination light is projected;~~

~~obtaining an image formed by a change in the light quantity of the transmitted light, occurring when the illumination light is projected on the reference object having been irradiated by the laser beam; and~~

~~analyzing a condition of the change in the reference object based on the~~

~~obtained image, wherein an irradiation intensity distribution of the laser beam is assessed based on an analytical result.~~

2. (Currently Amended) The method for assessing irradiation intensity of the laser beam according to claim 1, wherein the reference object includes a commercially available film for photographing

~~the irradiation step includes a step of irradiating the laser beam on the reference object on which ablation is caused by irradiating the laser beam, and on which the light quantity of the transmitted light of the illumination light changes in accordance with an ablation depth, and~~

~~wherein the analyzing step includes a step of analyzing the ablation depth of the reference object based on the image obtained in the image obtaining step.~~

3. (Currently Amended) The method for assessing irradiation intensity of the laser beam according to claim 1, wherein

forming the irradiation region includes repeatedly providing a plurality of uniform irradiation to the reference object taking a minimum ablation depth as a unit,

obtaining the image having the information on the gradation contrast includes obtaining a plurality of the images having the information on the gradation contrast change which are different in the number of irradiation, and

assessing appropriateness of the irradiation intensity distribution includes combining the information on the luminance change in the irradiation region of each of the images to obtain information on the irradiation intensity distribution for a whole region to be analyzed

~~the irradiation step includes a step of irradiating the laser beam so that plural irradiation samples are created on the reference object in different irradiation conditions, and~~

~~wherein the analyzing step includes a step of obtaining information on~~

~~luminance inclination of each of the samples base on luminance distribution data of the image obtained in the image obtaining step, and of analyzing the condition of the change in the reference object based on a relationship between the obtained information on the luminance inclination and the irradiation condition at the time of creating each of the irradiation samples.~~

4. (Currently Amended) An apparatus for assessing irradiation intensity of a laser beam comprising:

a reference object on which an irradiation region is formed and on which photo-ablation is caused by irradiating a laser beam for ablation, the reference object having a layer in which a transmitting quantity of illumination light changes in accordance with a thickness on which a change in its state is caused by irradiating the laser beam, and a light quantity of transmitted light of specified illumination light changes in accordance with an irradiation energy density of the laser beam when the illumination light is projected;

an ultraviolet laser processing device which processes the reference object in a condition of ablating a predetermined irradiation region to a uniform depth;

an image obtaining device which obtains an image having information on a gradation contrast change based on the transmitting quantity of the illumination light transmitted through respective positions in the irradiation region of the reference object by projecting the illumination light onto the reference object on which the irradiation region has been formed formed by a change in the light quantity of the transmitted light, occurring when the illumination light is projected on the reference object having been irradiated by the laser beam; and

an assessing device which assesses appropriateness of irradiation intensity distribution of the ultraviolet laser processing device based on whether the gradation contrast change is in a permissible range by analyzing information on a luminance change in the

~~irradiation region of the image~~ ~~an analyzing device which analyzes a condition of the change~~
~~in the reference object based on the obtained image, wherein an irradiation intensity~~
~~distribution of the laser beam is assessed based on an analytical result.~~

5. (Canceled).

6. (Currently Amended) The apparatus for assessing irradiation intensity of a
laser beam according to claim 4, wherein

the irradiation region is formed by repeatedly providing a plurality of uniform
irradiation to the reference object taking a minimum ablation depth as a unit,

the image obtaining device obtains a plurality of the images having
information on the gradation contrast change which are different in the number of irradiation
~~the image of the reference object on which plural irradiation samples are created by~~
~~irradiating the laser beam in different irradiation conditions, and~~

the assessing device combines the information on the luminance change in the
irradiation region of each of the images to obtain information on the irradiation intensity
distribution for a whole region to be analyzed ~~wherein the analyzing device obtains~~
~~information on luminance inclination of each of the samples base on luminance distribution~~
~~data of the obtained image and analyzes the condition of the change in the reference object~~
~~based on a relationship between the obtained information on the luminance inclination and~~
~~the irradiation condition at the time of creating each of the irradiation samples.~~

7. (Currently Amended) The apparatus for assessing irradiation intensity of a
laser beam according to claim 4, wherein the reference object includes a commercially
available film for photographing.

8. (Currently Amended) A laser beam irradiation system comprising:
an irradiation optical system for irradiating a laser beam onto an object to be
irradiated;

a reference object on which an irradiation region is formed and on which photo-ablation is caused by irradiating a laser beam for ablation, the reference object having a layer in which a transmitting quantity of illumination light changes in accordance with a thickness on which a change in its state is caused by irradiating the laser beam, and a light quantity of transmitted light of specified illumination light changes in accordance with an irradiation energy density of the laser beam when the illumination light is projected;

an ultraviolet laser processing device which processes the reference object in a condition of ablating a predetermined irradiation region to a uniform depth;

an image obtaining device which obtains an image having information on a gradation contrast change based on the transmitting quantity of the illumination light transmitted through respective positions in the irradiation region of the reference object by projecting the illumination light onto the reference object on which the irradiation region has been formed ~~formed by a change in the light quantity of the transmitted light, occurring when the illumination light is projected on the reference object having been irradiated by the laser beam;~~

an assessing device which assesses appropriateness of irradiation intensity distribution of the ultraviolet laser processing device based on whether the gradation contrast change is in a permissible range by analyzing information on a luminance change in the irradiation region of the image

~~an analyzing device which analyzes a condition of the change in the reference object based on the obtained image; and~~

a control device which obtains control data for the system so that the object to be irradiated achieves a condition of a desired change based on an analytical result from the ~~analyzing~~ assessing device.

9. (Original) The laser beam irradiation system according to claim 8, further

comprising a laser scanning unit which is arranged in the irradiation optical system and scans the object to be irradiated by the laser beam, and

wherein the control device obtains the control data for the laser scanning unit.

10. (Canceled).

11. (Currently Amended) The laser beam irradiation system according to claim 8, wherein

the irradiation region is formed by repeatedly providing a plurality of uniform irradiation to the reference object taking a minimum ablation depth as a unit,

the image obtaining device obtains a plurality of the images having information on the gradation contrast change which are different in the number of irradiation
~~the image of the reference object on which plural irradiation samples are created by irradiating the laser beam in different irradiation conditions, and~~

the assessing device combines the information on the luminance change in the irradiation region of each of the images to obtain information on the irradiation intensity distribution for a whole region to be analyzed ~~wherein the analyzing device obtains information on luminance inclination of each of the samples based on luminance distribution data of the obtained image and analyzes the condition of the change in the reference object based on a relationship between the obtained information on the luminance inclination and the irradiation condition at the time of creating each of the irradiation samples.~~

12. (Currently Amended) The laser beam irradiation system according to claim 8, wherein the reference object includes a commercially available film for photographing.